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U. S. Department of Agriculture

Forest Service

APPALACHIAN FOREST EXPERIMENT STATION

Technical Note No. 19  
Management - Mountains

Asheville, N. C.  
February 10, 1936

RECENT VOLUME TABLES FOR SOME

SOUTHERN APPALACHIAN SPECIES

BY

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# INDEX TO VOLUME TABLES

Species	Site	National Forest furnishing basic data	Tables by D.B.H. and log lengths: Table	Tables by D.B.H. and Av. Merch. Ht.: Number
Chestnut Oak	III:	Nantahala	1	1A
White Oak	II:	Nantahala	2	2A
White Oak	III:	Nantahala	3	3A
N. Red Oak	II:	Nantahala	4	4A
Black Oak	II:	Nantahala	5	5A
Y. Poplar	II:	Nantahala	6	6A
Red Maple	II:	Nantahala	7	7A
Basswood	II:	Nantahala	8	8A
Shortleaf Pine	II:	Nantahala	9	9A
Shortleaf Pine	III:	Nantahala	10	10A
Shortleaf Pine	II:	Cherokee	11	11A
Shortleaf Pine	III:	Cherokee	12	12A
Virginia Pine	II:	Cherokee	13	13A
Chestnut	I:	Pisgah	14	14A
Chestnut	II:	Pisgah	15	15A
Sugar Maple	I:	Pisgah	16	16A
White Pine	I:	Pisgah	17	17A
Chestnut Oak	II:	Cherokee, Nantahala, Pisgah	18	18A
Y. Poplar	I:	Cherokee, Nantahala, Pisgah	19	19A
Sc. Oak	III:	Nantahala, Cherokee	20	20A
Basswood	I:	Pisgah, Nantahala	21	21A
W. Ash	-	Pisgah, Nantahala	22	22A
Black Birch	-	Cherokee, Nantahala, Pisgah and Bland Co., Va.	23	23A



## Introduction

The volume tables presented in this technical note are the results of a cooperative project participated in by Forest Service personnel of Region 8 and the Appalachian Forest Experiment Station. Field data were collected by the personnel of the various national forests and computations were carried on by the experiment station with the assistance of men assigned to the project from cooperating forests.

Sufficient data were not available to prepare tables for all of the important commercial species nor were the data adequate for complete sets of site class tables by species. It is expected that additional tables and revisions of the present ones will be made from time to time as necessity indicates and more data are collected.

The present series is being released to fill, partially at least, an immediate need of the U. S. Forest Service, and of other public conservation agencies operating in the region.

## Utilization Represented by Tables

Since the original stem measurements were made on going logging operations the volume tables reflect the current utilization and scaling practice on the several national forests and are intended primarily for use on these areas or where similar practices prevail.

In building the tables several departures from conventional utilization standards were used. Actual top diameters as determined by the logger instead of fixed top diameters were used to establish merchantable heights and the gross volumes of individual trees were determined by scaling the logs as cut rather than by the conventional 16 foot log lengths.

The use of actual merchantable top diameters rather than fixed top diameters seems justified because both field observation and examination of the basic data indicate that saw log utilization to a fixed top diameter is not possible in the existing timber stands on southern Appalachian national forests. In the case of hardwoods, it was found that the utilized top diameter, outside bark, when expressed as a percentage of d.b.h., was approximately the same for all diameter classes. This constant percentage relationship has already been reported by Girard<sup>1/</sup> for another region. For the hardwoods, therefore, a single percentage appears to be an adequate expression of top utilization. For example, on Site II the merchantable top diameter, outside bark, of northern red oak was found to average 74.4% of breast high diameter. In terms of averages, the merchantable top, o.b., of 18 inch northern red oaks on Site II would be  $0.744 \times 18$  or 13.4 inches; 36 inch trees would have a merchantable top of  $0.774 \times 36$  or 26.8 inches. Judging from the data at hand, this percentage expression of merchantable top, in the case of hardwoods, appears to be more closely associated with site than with species. In terms of gross averages for the hardwood species, the merchantable top diameters were found to be approximately 68% of d.b.h. on Site I, 74% on Site II and 88% on Site III.

The merchantable top, in terms of percent of d.b.h. for the conifers, was found to be definitely associated with diameter but in no case did the

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<sup>1/</sup> Girard, J. W., Volume Tables for Mississippi Bottomland Hardwoods and Southern Pines. Journal of Forestry 31:38, 1933.





extent of this association indicate that the use of a fixed top diameter was advisable. Due to the few coniferous species for which data were available and the fact that the trees of two of the species were second growth, comparisons of top utilization by sites showed no definite trends as was the case with hardwoods. Top utilization in the second growth white pine used to construct Tables 17 and 17A varied from 71% of d.b.h. at 10 inches to 39% of d.b.h. at 30 inches. For the second growth Virginia pine used in making Tables 13 and 13A, utilization ranged from 75% of d.b.h. at 10 inches to 57% at 20 inches. A similar comparison by site classes was possible in the case of shortleaf pine but differences in the top utilization percentages between sites were small and could not be considered significant. An average utilization for this species was found to range from 76% of d.b.h. at 10 inches to 61% at 30 inches.

The gross volume of individual trees was determined by scaling the logs in the lengths cut rather than in 16 foot lengths because in the usual southern Appalachian sawtimber operation the bulk of the logs are cut in short lengths. Analysis of the basic data collected on the three national forests show that 70% of all logs cut were shorter than 16 feet. Volumes given in the tables, therefore, more nearly reflect the actual board foot scale as determined by the general woods practice of the region that would have been the case if scaling had been done by 16 foot log lengths. However, in Tables 1 - 23 merchantable heights are expressed in terms of 16 foot logs for convenience in use.

#### Considerations in Application of Tables

It will be noted that two series of volume tables are presented. The first series, Tables 1 - 23, are in conventional form and require no explanation other than that already given. They are intended primarily for use where a fair degree of accuracy is required and where field tallies allow the recording of both d.b.h. and estimated merchantable heights.

Tables 1A - 23A were made from the same data as was the original series but give gross and net tree volumes by d.b.h. class and average merchantable height. These tables are intended for comparatively rough approximations of volume in extensive work where field tallies omit the consideration of height and only breast high diameters are recorded.

In this second series, average merchantable heights (column 2) and defect percentages (column 4) were obtained by the use of fitted free hand curves. For certain species the data were not adequate for highly satisfactory expressions of these relationships. This is reflected in the somewhat high aggregate differences shown for several of the tables.

Although the defect percentages and consequently the net volumes may be adequate for the immediate localities in which the basic data were gathered it is known that defect varies widely with locality and is dependent largely on the past fire history of individual stands.<sup>2/</sup> Therefore the field man should make every effort to revise these tables in accordance with additional local experience.

It is also urged that in cases where the average merchantable heights shown in column 2 do not correspond with local utilization a new curve be drawn from local data. Diameter and new merchantable height data can then be substituted in the basic formula given with each table and new gross volumes can be computed. These can in turn be reduced by the application of local defect data.

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<sup>2/</sup> Hepting, George H. and Hedgcock, George G., Relation Between Butt Rot and Fire in Some Eastern Hardwoods. Appalachian Forest Experiment Station



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 1 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H.		Gross volume in board feet (tens) by 16 ft. log lengths										
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$				
10	2	3	4									
12	3	4	6	7								
14	4	7	9	11	13							
16	6	10	13	16	18	21						
18	8	13	17	21	25	29						
20	10	17	23	28	33	38	42					
22	13	22	30	36	43	49	54					
24	17	28	37	46	54	61	68					
26	21	34	46	56	66	76	84					
28	25	42	56	68	80	92	103					
30	30	50	67	82	97	110	123					
32	36	59	79	97	114	130	146					
34	42	70	93	115	135	154	172					
36	49	81	108	133	156	178	199					
38		93	125	154	180	206	230	Computed by				
								BF				
40		106	143	176	206	235	263	Checked by				
42			162	199	234	267	298	CRR				

Block indicates extent of basic data

Aggregate difference: Table 0.24% high

Average individual deviation: 10.7%

Based on 71 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.635 (\log. \text{d.b.h., inches}) + 0.721 (\log. \text{merch. ht. ft.}) - 2.062$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

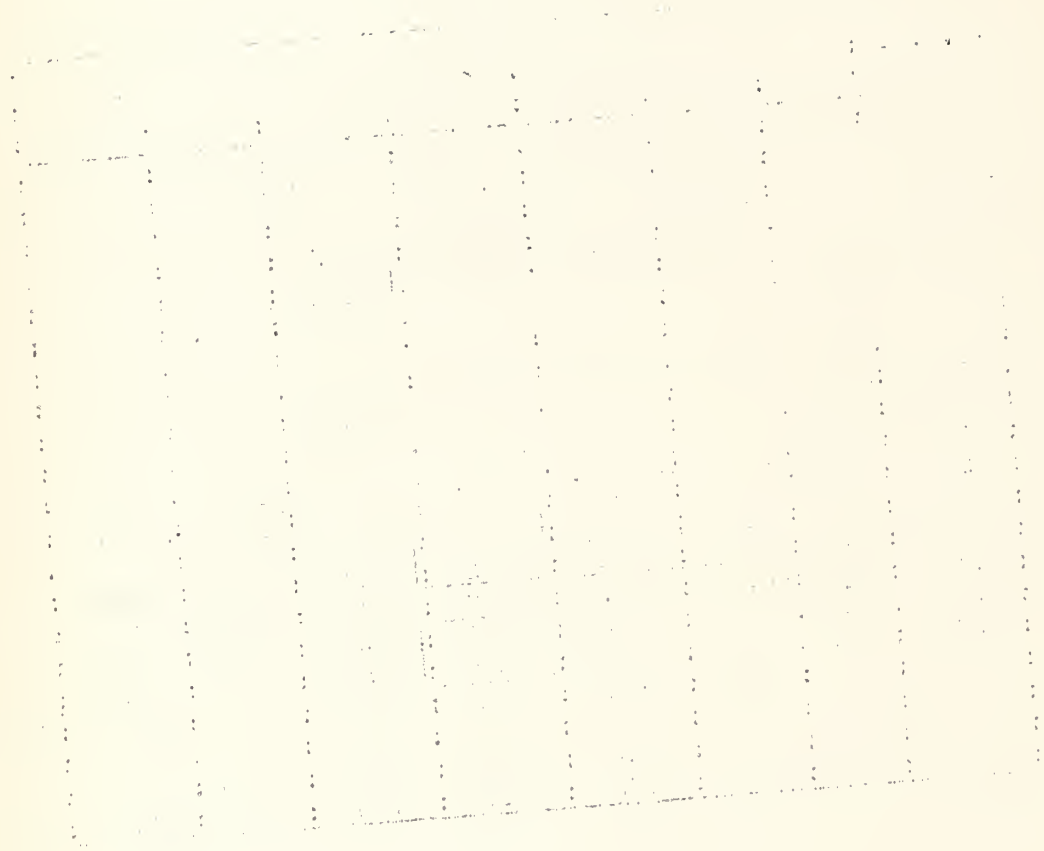
$$\text{Log. Volume} = 2.635 (\log. 54) + 0.721 (\log. 48) - 2.062$$

$$V = 2.635 (1.732) + 0.721 (1.681) - 2.062$$

$$V = 4.564 + 1.212 - 2.062 = 3.714, \text{ Antilog. is } 5,176 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



Below the grid, there is a large area of faint, illegible text or markings, possibly representing a list or a series of data entries. The text is too light to read and appears to be scattered across the lower half of the page. There are some faint, dark spots that might be remnants of text or ink marks.

RS - AP  
M - 1  
(S-Timber Surveys)

TABLE 2 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE II

Nantahala National Forest

Trees over 75 years old

Utilization: 1 ft. stump and merchantable top

		Gross volume in board feet (tens)							
:D.B.H.:		by 16 ft. log lengths							
:Inches:	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	4	5					
12	4	5	7	8					
14	5	8	10	12	14	15			
16	7	10	14	17	19	22			
18		15	19	23	26	29	32		
20		20	25	30	34	38	42		
22		25	32	38	44	49	54		
24		31	40	48	54	61	67	73	
26		38	49	58	67	75	82	89	
28		46	59	70	81	90	99	108	
30		55	71	84	96	108	119	128	
32		65	83	99	114	127	140	153	
34			98	116	133	149	164	178	
36			112	134	154	172	189	205	
38			129	154	177	198	217	236	
40			147	176	201	225	248	268	
42			167	199	228	255	280	304	Table by BF
44				225	258	288	317	344	Checked by JHS
46				252	288	323	355	385	
48				280	321	359	394	428	

Block indicates extent of basic data

Aggregate difference in Bd. Ft. Table 0.24% low

Average Individual Deviation: 13.6%

Based on 88 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.558 (\text{log. D.B.H. inches}) + .612 (\text{log. merch. ht. ft.}) - 1.774$$

Table can be extended by formula as follows:

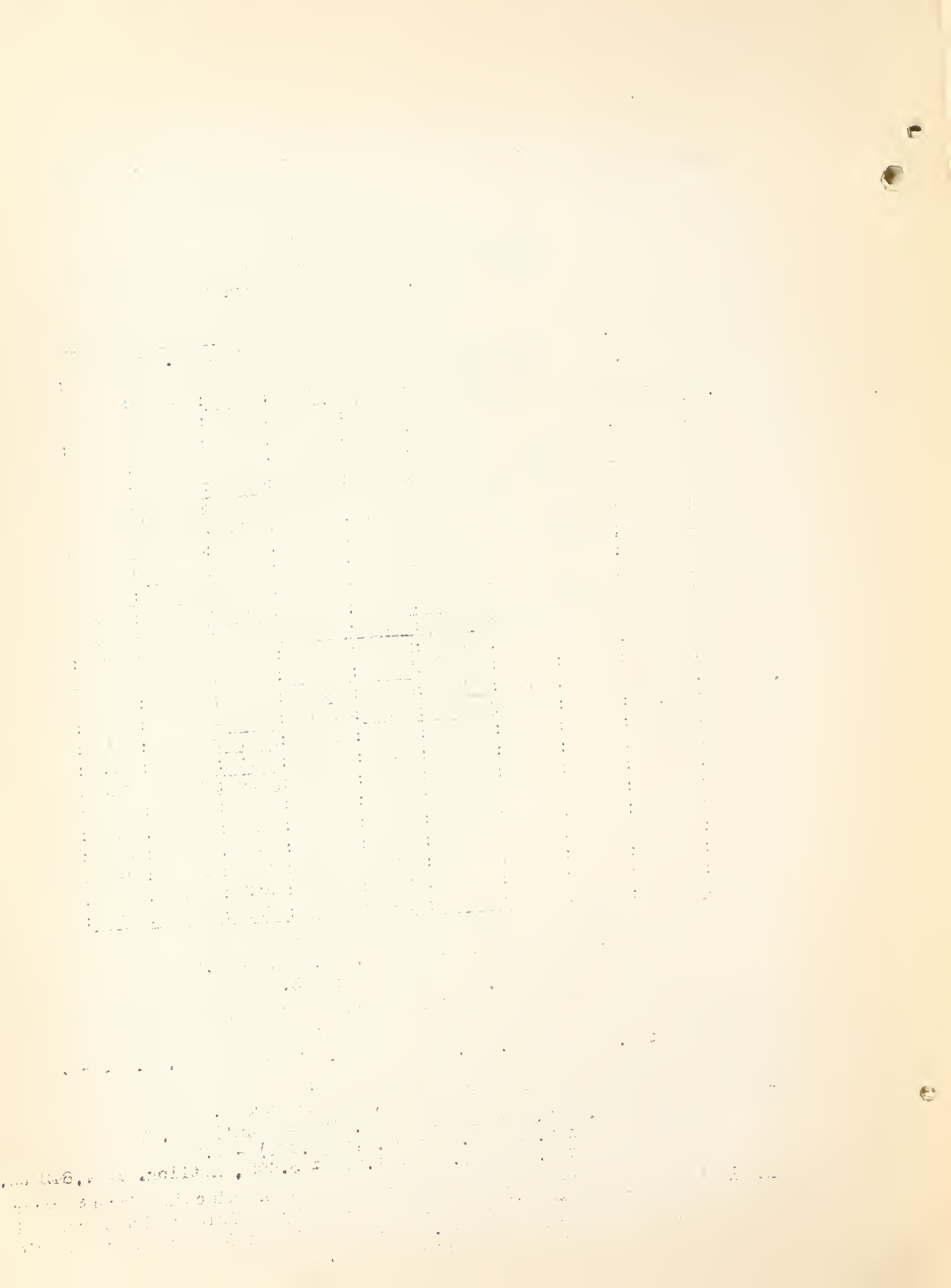
Example - Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Vol.} = 2.558 (\text{log. 54"}) + .612 (\text{log. 48'}) - 1.774$$

$$V = 2.558 (1.732) + .612 (1.681) - 1.774$$

$$V = 4.450 + 1.029 - 1.774 = 3.685; \text{Antilog. is } 4,842 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through inclusion of additional data.





RS - AP  
M-1  
(S-Timber Surveys)

TABLE 3 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: Gross volume in board feet (tens)						
: D.B.H.: by 16 ft. log lengths						
: Inches:	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	
10	2	3	4			
12	3	5	6	8		
14	4	7	10	12	14	
16	6	10	14	17	20	
18	8	14	19	23	27	
20		19	25	31	36	
22		24	32	39	46	
24		30	41	50	58	
26		38	50	62	72	
28		46	62	76	88	
30		56	74	91	106	
32		66	88	108	126	
34			104	128	150	
36			121	148	173	
38			140	172	201	Computed by JHS
						Checked by CRR

Block indicates extent of basic data

Aggregate Difference: Table 0.40% high  
Average Individual Deviation: 11.6%

Based on 93 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.688 (\log.d.b.h., \text{inches}) + 0.709 (\log.merch.ht., \text{ft.}) - 2.079$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.688 (\log.54) + 0.709 (\log.48) - 2.079$$

$$V = 2.688 (1.732) + 0.709 (1.681) - 2.079$$

$$V = 4.656 + 1.192 - 2.079 = 3.769, \text{ Antilog. is } 5,861 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.





TABLE 4 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II  
Nantahala National Forest.

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)										
D.B.H.		by 16 ft. log lengths.										
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4			
10	2	3	4	5								
12	3	5	6	8	9							
14	4	7	10	12	14	15						
16	6	10	13	16	19	21						
18		13	18	21	25	28	31					
20		17	25	28	32	37	41	45				
22		22	29	35	41	46	51	56				
24		27	36	43	51	57	64	70				
26		33	44	53	62	70	78	85				
28		39	52	63	74	84	93	102				
30			62	75	88	99	110	121				
32			72	88	103	116	129	142				
34			84	103	120	136	151	165				
36			96	118	137	155	173	189				
38			110	135	157	178	198	216				
40			125	152	177	201	224	245				
42			141	171	200	226	252	276				
44				193	225	255	284	310	Computed			
46				215	251	284	316	346	by CRR			
48				238	278	315	350	383	Checked			
										by JHS		

Block indicates extent of basic data

Aggregate difference: Table 0.34% low  
Average individual deviation: 9.91%

Based on 129 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.456 (\log. \text{d.b.h., inches}) + 0.686 (\log. \text{merch. ht. ft.}) - 1.784$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.456 (\log. 54) + 0.686 (\log. 48) - 1.784$$

$$V = 2.456 (1.732) + 0.686 (1.681) - 1.784$$

$$V = 4.254 + 1.153 - 1.784 = 3.623, \text{ Antilog is } 4198 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 5 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
D.B.H.		by 16 ft. log lengths								
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	4	5						
12	3	5	6	8	10					
14	4	7	10	12	14	16	18			
16	6	10	13	17	20	23	25			
18		13	18	22	26	30	34	38		
20		17	23	29	34	40	44	49		
22		22	29	37	44	50	56	62		
24		27	37	46	54	62	70	78		
26			45	56	66	76	86	95		
28			54	67	80	92	103	114		
30			64	80	95	109	122	136		
32			75	94	111	128	144	160		
34			88	110	130	149	168	186		
36			101	126	149	172	193	214		
38			116	144	171	197	222	246		
40			131	164	194	224	252	279		Computed
42			148	185	219	252	284	315		Checked
44				209	248	285	320	355		by CRR

Block indicates extent of basic data

Aggregate difference: Table 0.94% low  
Average individual deviation: 12.0%

Based on 79 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. volume} = 2.500 (\text{log. d.b.h., inches}) + 0.767 (\text{log. merch. ht. ft.}) - 1.945$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.500 (\text{log. 54}) + 0.767 (\text{log. 48}) - 1.945$$

$$V = 2.500 (1.732) + 0.767 (1.681) - 1.945$$

$$V = 4.330 + 1.289 - 1.945 = 3.674, \text{ antilog. is } 4,721 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 6 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
:D.B.H. :		by 16 ft. log lengths.								:
:Inches :	1 :	1½ :	2 :	2½ :	3 :	3½ :	4 :	4½ :		:
10	3	4	6	7						
12	5	7	9	10						
14	7	10	12	15	18	20				
16	10	14	17	21	24	28				
18		18	23	28	32	37	41			
20		23	30	36	42	47	53			
22			37	45	52	59	66			
24			46	56	65	73	82			
26			56	67	78	89	100	110		
28			67	81	94	107	119	131		
30				95	111	126	141	155		
32				111	129	147	164	182		
34				129	151	171	191	211		
36				148	172	195	219	241		
38				169	197	223	250	275		
40				191	222	253	282	311		
42				215	250	284	318	350	Computed	
44					280	319	356	393	by BF	
46					312	355	396	438	Checked	
48					345	393	438	483	By JHS	

Block indicates extent of basic data

Aggregate difference: Table 0.64% low  
Average individual deviation: 9.7%

Based on 86 stem measurements from which the following logarithmic formula was derived and used to construct the table:

$$\text{Log. Volume} = 2.417 (\text{log. d.b.h., inches}) + 0.831 (\text{log. merch. ht. ft.}) - 1.922$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.417 (\text{log. 54}) + 0.831 (\text{log. 48}) - 1.922$$

$$V = 2.417 (1.732) + 0.831 (1.681) - 1.922$$

$$V = 4.186 + 1.397 - 1.922 = 3.661, \text{ antilog. is } 4,581 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

[illegible]



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 7 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
:D.B.H. :		by 16 ft. log lengths.								:
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	5	6						
12	3	5	7	9						
14	5	8	10	12	14	16				
16	6	10	14	17	20	22				
18		14	18	22	26	29	33			
20		17	23	28	33	38	42			
22		22	29	35	42	47	53			
24		27	36	44	51	58	65			
26			43	53	62	70	78	86		
28			51	62	73	83	93	102		
30			60	73	86	98	109	120		
32			70	86	100	114	127	139		
34				99	116	132	147	161		
36				113	132	150	167	184		
38				128	150	172	190	209		
40				145	169	192	214	236	Computed	
42				162	190	216	240	264	by BF	
44				182	212	242	269	296	Checked	

by JHS

Block indicates extent of basic data

Aggregate difference: Table 0.70% low  
Average individual deviation: 12.9%

Based on 75 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.349 (\log. \text{d.b.h., inches}) + .705 (\log. \text{merch. ht. ft.}) - 1.664$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees

$$\text{Log. Volume} = 2.349 (\log. 54) + .705 (\log. 48) - 1.664$$

$$V = 2.349 (1.732) + .705 (1.681) - 1.664$$

$$V = 4.068 + 1.185 - 1.664 = 3.589 \text{ or Antilog. is } 3882 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National forests of Region 8. The table is subject to later revision through inclusion of additional data.





RS-AP  
M-1  
(S-Timber Surveys)

TABLE 8 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II  
Nantahala National Forest.

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross Volume in board feet (tons)									
D.B.H.		by 16 ft. log lengths.									
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	
10	2	3	4	6	7						
12	3	5	7	9	10						
14	4	7	10	13	15	17					
16		10	14	17	21	24					
18		13	18	23	27	32	36				
20		17	24	30	35	41	46	51			
22		21	30	37	44	51	58	64	71		
24		26	36	46	55	63	71	79	87		
26		32	44	56	66	77	87	96	106		
28			53	66	79	92	104	115	126		
30			62	78	94	108	122	136	149		
32			73	91	109	126	143	158	174		
34			84	106	127	147	166	184	202		
36			96	121	145	168	189	210	231		
38			110	138	165	191	216	240	264		
40			124	156	187	216	244	272	298		

Computed by CRR  
Checked by JHS

Block indicates extent of basic data

Aggregate difference: Table 1.36% low  
Average individual deviation: 9.79%

Based on 92 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.402 (\log. \text{d.b.h., inches}) + 0.796 (\log. \text{merch. ht. ft.}) - 1.852$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54-inch trees.

$$\text{Log. Volume} = 2.402 (\log. 54) + 0.796 (\log. 48) - 1.852$$

$$V = 2.402 (1.732) + 0.796 (1.681) - 1.852$$

$$V = 3.646 = \text{Volume of 4426 bd. ft. (Antilog. of 3.646)}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

Date		Time		Location		Remarks	
1911	10/1	10:00	11:00	1000	1000	1000	1000
1911	10/2	10:00	11:00	1000	1000	1000	1000
1911	10/3	10:00	11:00	1000	1000	1000	1000
1911	10/4	10:00	11:00	1000	1000	1000	1000
1911	10/5	10:00	11:00	1000	1000	1000	1000
1911	10/6	10:00	11:00	1000	1000	1000	1000
1911	10/7	10:00	11:00	1000	1000	1000	1000
1911	10/8	10:00	11:00	1000	1000	1000	1000
1911	10/9	10:00	11:00	1000	1000	1000	1000
1911	10/10	10:00	11:00	1000	1000	1000	1000
1911	10/11	10:00	11:00	1000	1000	1000	1000
1911	10/12	10:00	11:00	1000	1000	1000	1000
1911	10/13	10:00	11:00	1000	1000	1000	1000
1911	10/14	10:00	11:00	1000	1000	1000	1000
1911	10/15	10:00	11:00	1000	1000	1000	1000
1911	10/16	10:00	11:00	1000	1000	1000	1000
1911	10/17	10:00	11:00	1000	1000	1000	1000
1911	10/18	10:00	11:00	1000	1000	1000	1000
1911	10/19	10:00	11:00	1000	1000	1000	1000
1911	10/20	10:00	11:00	1000	1000	1000	1000
1911	10/21	10:00	11:00	1000	1000	1000	1000
1911	10/22	10:00	11:00	1000	1000	1000	1000
1911	10/23	10:00	11:00	1000	1000	1000	1000
1911	10/24	10:00	11:00	1000	1000	1000	1000
1911	10/25	10:00	11:00	1000	1000	1000	1000
1911	10/26	10:00	11:00	1000	1000	1000	1000
1911	10/27	10:00	11:00	1000	1000	1000	1000
1911	10/28	10:00	11:00	1000	1000	1000	1000
1911	10/29	10:00	11:00	1000	1000	1000	1000
1911	10/30	10:00	11:00	1000	1000	1000	1000
1911	10/31	10:00	11:00	1000	1000	1000	1000

The following table shows the results of the experiments conducted during the month of October, 1911. The data is presented in a tabular form, with columns for Date, Time, Location, and Remarks. The table is organized into two main sections: the first section covers the period from October 1st to October 31st, and the second section covers the period from November 1st to November 30st. The data is presented in a clear and concise manner, allowing for easy comparison and analysis of the results.

The first section of the table shows that the results of the experiments were generally consistent throughout the month of October. The data indicates that the experiments were conducted under similar conditions, and the results were similar. This suggests that the experiments were well-controlled and that the results are reliable.

The second section of the table shows that the results of the experiments were also generally consistent throughout the month of November. The data indicates that the experiments were conducted under similar conditions, and the results were similar. This further supports the conclusion that the experiments were well-controlled and that the results are reliable.

Overall, the results of the experiments conducted during the month of October and November, 1911, are consistent and reliable. The data indicates that the experiments were well-controlled and that the results are similar. This suggests that the experiments were conducted under similar conditions and that the results are reliable.

RS - AP  
M-1  
(S-Timber Surveys)

TABLE 9 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)										
:D.B.H. :		by 16 ft. log lengths.										:
:Inches :		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	:
:	:	:	:	:	:	:	:	:	:	:	:	:
:	10	2	3	4	6							:
:	12	3	5	7	9	11						:
:	14	4	7	10	12	15	18	20				:
:	16		9	13	17	21	24	28	31			:
:	18		12	17	22	27	32	37	41	46		:
:	:	:	:	:	:	:	:	:	:	:	:	:
:	20		16	22	29	35	41	47	53	58	64	:
:	22		19	28	36	44	51	58	66	73	80	:
:	24			34	44	53	62	72	80	89	98	:
:	26			41	53	64	76	86	97	108	118	:
:	28			49	63	76	90	103	115	128	140	:
:	:	:	:	:	:	:	:	:	:	:	:	:
:	30			57	74	90	105	120	136	150	165	:
:	32			66	86	104	122	140	157	175	191	:
:	34			77	99	120	141	162	182	201	221	:
:	36			87	112	137	161	184	207	229	252	:
:	:	:	:	:	:	:	:	:	:	:	:	:

(Computed by CRR  
(Checked by JHS)

Block indicates extent of basic data

Aggregate difference: Table 1.06% low

Average individual deviation: 10.69%

Based on 97 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.326 (\log. \text{d.b.h., inches}) + 0.880 (\log. \text{merch. ht., ft.}) - 1.893$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.326 (\log. 54) + 0.880 (\log. 48) - 1.893$$

$$V = 2.326 (1.732) + 0.880 (1.681) - 1.893$$

$$V = 4.029 + 1.479 - 1.893 = 3.615, \text{ Antilog. is } 4,121 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS-AP  
M-1  
(S-Timber Surveys)

TABLE 10 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
: D.B.H. :		by 16 ft. log lengths								:
: Inches :	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$			:
10	2	3	5	6						:
12	3	5	7	9	11					:
14	4	7	10	13	15	18				:
16	5	10	14	17	21	24				:
18		13	18	23	27	32	37			:
20		16	23	29	35	41	47			:
22		20	28	36	44	51	58			:
24			34	44	53	62	71			:
26			42	53	64	75	86			:
28			49	63	76	89	101			:
30				74	89	104	119			:
32				86	104	121	138			:

: Computed by  
CRR  
Checked by  
BF

Block indicates extent of basic data

Aggregate difference: Table 2.14% low  
Average individual deviation: 13.31%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.311 (\log. d.b.h., \text{inches}) + 0.852 (\log. \text{merch. ht. ft.}) - 1.827$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.311 (\log. 54) + 0.852 (\log. 48) - 1.827$$

$$V = 2.311 (1.732) + 0.852 (1.681) - 1.827$$

$$V = 4.003 + 1.432 - 1.827 = 3.608, \text{ Antilog. is } 4,055 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 11 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)												
:D.B.H.:		by 16 ft. log lengths												:
:Inches:		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$		
10	2		3	4	6	7								
12	3		5	7	9	10	12	14	15					
14	4		8	10	13	16	18	21	23	25				
16			10	15	18	22	25	29	32	36				
18			14	20	25	30	35	39	44	48	52			
20			19	26	33	39	46	52	57	63	69			
22			24	33	42	50	58	66	73	81	88	95		
24				42	52	63	73	82	92	101	110	119		
26				51	65	77	90	101	113	124	136	146		
28				62	78	94	108	123	137	150	164	177		
30				74	93	112	129	147	163	180	196	211		
32					110	132	153	173	193	212	231	250		
34					129	155	180	203	226	249	271	293		
36					149	179	207	234	261	287	313	338		

Block indicates extent of basic data

(Computed by BF  
(Checked by CRR

Aggregate difference: Table 1.11% low

Average individual deviation: 11.3%

Based on 135 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.579 (\log.d.b.h., \text{inches}) + 0.809 (\log.merch.ht., \text{ft.}) - 2.057$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Volume} = 2.579 (\log.54) + 0.809 (\log.48) - 2.057$$

$$V = 2.579 (1.732) + 0.809 (1.681) - 2.057$$

$$V = 4.467 + 1.360 - 2.057 = 3.770, \text{ Antilog. is } 5,868 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.







RS - AP  
M-1  
(S-Timber Surveys)

TABLE 12 - BOARD FOOT VOLUME TABLE - SCRIBER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
D.B.H.		by 16 ft. log lengths								
Inches	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4		
10	2	3	4	5						
12	3	5	7	9	10					
14	4	7	10	13	16	18				
16	6	11	15	18	22	26	29			
18		14	20	25	30	35	40	44		
20		19	27	34	40	46	52	58		
22		25	34	43	51	59	67	75		
24		31	43	54	65	75	85	94		
26		38	53	67	80	93	105	117		
28			65	82	98	113	128	142		
30			78	98	117	136	154	171		
32			92	116	139	161	182	203	Computed	
34				137	164	190	215	239	by CRR	
36				158	190	220	248	277	Checked	
									by BF	

Block indicates extent of basic data

Aggregate difference: Table is 0.3% low

Average individual deviation: 11.96%

Based on 83 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.650 (\text{log. d.b.h., inches}) + 0.802 (\text{log. merch. ht. ft.}) - 2.130$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.650 (\text{log. 54}) + 0.802 (\text{log. 48}) - 2.130$$

$$V = 2.650 (1.732) + 0.802 (1.681) - 2.130$$

$$V = 4.590 + 1.348 - 2.130 = 3.808, \text{ Antilog. is } 6,427 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 13 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II  
Cherokee National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H.		by 16 ft. log lengths.									
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4		
8	1	2	2								
10	2	3	4	5	6	7					
12	3	5	7	8	10	11	13				
14	4	7	10	12	14	16	18	20			
16	6	10	13	16	20	22	25	28			
18	8	13	18	22	26	30	33	37			
20	10	17	23	28	33	38	43	48			
22		21	28	35	42	48	54	60			
24		26	35	44	52	59	67	74			

Computed by BF  
Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 1.44% low  
Average individual deviation: 10.5%

Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct the table:

$$\text{Log. Volume} = 2.404 (\text{log. d.b.h., inches}) + 0.762 (\text{log. merch. ht. ft.}) - 1.825$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 36 inch trees:

$$\text{Log. volume} = 2.404 (\text{log. 36}) + 0.762 (\text{log. 48}) - 1.825$$

$$V = 2.404 (1.556) + 0.762 (1.681) - 1.825$$

$$V = 3.741 + 1.281 - 1.825 = 3.197, \text{ Antilog. is } 1,574 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through the inclusion of additional data.

[illegible]

1. *Phragmites australis* (Cav.) Trin. ex Steud.

RS - AP  
M-1  
(S-Timber Surveys)

TABLE 14 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I

Pisgah National Forest.

Trees over 75 years old.

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
		by 16 ft. log lengths.									
: D.B.H. :	: Inches :	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
: 10 :	: 2 :	3	4	5	6	7	8	9	10	11	12
: 12 :	: 4 :	6	8	10	12	14	16	18	20	22	24
: 14 :	: 6 :	8	11	14	17	19	22	25	29	32	35
: 16 :	: 8 :	11	15	18	22	25	29	32	36	40	44
: 18 :	: 10 :	14	19	23	28	32	36	40	45	50	55
: 20 :	: 12 :	17	23	29	34	40	45	50	55	61	67
: 22 :	: 14 :	20	28	35	42	48	55	61	67	73	80
: 24 :	: 16 :	24	34	42	50	58	66	73	80	87	95
: 26 :	: 18 :		40	50	60	69	78	86	95	103	111
: 28 :	: 20 :		46	58	70	80	91	101	111	120	129
: 30 :	: 22 :		54	67	80	93	105	117	128	139	149
: 32 :	: 24 :		62	78	93	107	121	134	148	160	172
: 34 :	: 26 :			88	105	121	137	152	167	182	197
: 36 :	: 28 :			100	119	137	155	173	189	206	223
: 38 :	: 30 :			112	134	154	174	194	212	231	250
: 40 :	: 32 :			125	149	172	194	216	237	258	280
: 42 :	: 34 :			139	166	192	217	241	264	288	311
: 44 :	: 36 :			154	184	212	239	266	292	318	344
: 46 :	: 38 :				201	233	263	292	321	348	376
: 48 :	: 40 :				221	256	288	321	352	383	414
: 50 :	: 42 :				242	279	316	351	385	419	454
: 52 :	: 44 :				263	303	343	381	418	455	494
: 54 :	: 46 :				286	330	372	414	455	494	535
: 56 :	: 48 :				309	356	403	448	492	535	578
: 58 :	: 50 :				334	386	436	484	532	578	625
: 60 :	: 52 :										

Block indicates extent of basic data

(Computed by CRR)

(Checked by BF)

Aggregate difference: Table is 1.41% high

Average individual deviation: 12.56%

Based on 214 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.263 (\text{log.d.b.h., inches}) + 0.791 (\text{log. merch.ht.ft.}) - 1.767$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 64 inch trees:

$$\text{Log Volume} = 2.263 (\text{log.64}) + 0.791 (\text{log.48}) - 1.767$$

$$V = 2.263 (1.806) + 0.791 (1.681) - 1.767$$

$$V = 4.087 + 1.330 - 1.767 = 3.650, \text{ Antilog. is } 4,467 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R. 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936

TABLE 1. - SUMMARY OF DATA FOR THE 1960-1961 FLOODING OF THE MISSISSIPPI RIVER AT ST. LOUIS, MO.									
1. GENERAL INFORMATION									
1.1	NAME OF FLOODING	MISSISSIPPI RIVER AT ST. LOUIS, MO.							
1.2	DATE OF FLOODING	JUNE 1, 1960 - JUNE 1, 1961							
1.3	LOCATION OF FLOODING	ST. LOUIS, MO.							
1.4	CAUSE OF FLOODING	HEAVY RAINFALL							
1.5	AREA AFFECTED	ST. LOUIS, MO.							
1.6	NUMBER OF PEOPLE AFFECTED	100,000							
1.7	NUMBER OF HOMES AFFECTED	10,000							
1.8	NUMBER OF BUSINESSES AFFECTED	1,000							
1.9	NUMBER OF SCHOOLS AFFECTED	100							
1.10	NUMBER OF CHURCHES AFFECTED	10							
1.11	NUMBER OF HOSPITALS AFFECTED	1							
1.12	NUMBER OF POLICE STATIONS AFFECTED	1							
1.13	NUMBER OF FIRE STATIONS AFFECTED	1							
1.14	NUMBER OF POST OFFICES AFFECTED	1							
1.15	NUMBER OF TELEPHONE EXCHANGES AFFECTED	1							
1.16	NUMBER OF RAILROAD STATIONS AFFECTED	1							
1.17	NUMBER OF AIRPORTS AFFECTED	1							
1.18	NUMBER OF PORTS AFFECTED	1							
1.19	NUMBER OF MARSHES AFFECTED	1							
1.20	NUMBER OF FISHING PONDS AFFECTED	1							
1.21	NUMBER OF GOLF COURSES AFFECTED	1							
1.22	NUMBER OF PARKS AFFECTED	1							
1.23	NUMBER OF THEATERS AFFECTED	1							
1.24	NUMBER OF RESTAURANTS AFFECTED	1							
1.25	NUMBER OF HOTELS AFFECTED	1							
1.26	NUMBER OF MOTELS AFFECTED	1							
1.27	NUMBER OF CARPENTERS AFFECTED	1							
1.28	NUMBER OF PLUMBERS AFFECTED	1							
1.29	NUMBER OF ELECTRICIANS AFFECTED	1							
1.30	NUMBER OF MECHANICS AFFECTED	1							
1.31	NUMBER OF PAINTERS AFFECTED	1							
1.32	NUMBER OF CARPENTERS AFFECTED	1							
1.33	NUMBER OF PLUMBERS AFFECTED	1							
1.34	NUMBER OF ELECTRICIANS AFFECTED	1							
1.35	NUMBER OF MECHANICS AFFECTED	1							
1.36	NUMBER OF PAINTERS AFFECTED	1							
1.37	NUMBER OF CARPENTERS AFFECTED	1							
1.38	NUMBER OF PLUMBERS AFFECTED	1							
1.39	NUMBER OF ELECTRICIANS AFFECTED	1							
1.40	NUMBER OF MECHANICS AFFECTED	1							
1.41	NUMBER OF PAINTERS AFFECTED	1							
1.42	NUMBER OF CARPENTERS AFFECTED	1							
1.43	NUMBER OF PLUMBERS AFFECTED	1							
1.44	NUMBER OF ELECTRICIANS AFFECTED	1							
1.45	NUMBER OF MECHANICS AFFECTED	1							
1.46	NUMBER OF PAINTERS AFFECTED	1							
1.47	NUMBER OF CARPENTERS AFFECTED	1							
1.48	NUMBER OF PLUMBERS AFFECTED	1							
1.49	NUMBER OF ELECTRICIANS AFFECTED	1							
1.50	NUMBER OF MECHANICS AFFECTED	1							

2. DETAILED INFORMATION

2.1 NAME OF FLOODING

2.2 DATE OF FLOODING

2.3 LOCATION OF FLOODING

2.4 CAUSE OF FLOODING

2.5 AREA AFFECTED

2.6 NUMBER OF PEOPLE AFFECTED

2.7 NUMBER OF HOMES AFFECTED

2.8 NUMBER OF BUSINESSES AFFECTED

2.9 NUMBER OF SCHOOLS AFFECTED

2.10 NUMBER OF CHURCHES AFFECTED

2.11 NUMBER OF HOSPITALS AFFECTED

2.12 NUMBER OF POLICE STATIONS AFFECTED

2.13 NUMBER OF FIRE STATIONS AFFECTED

2.14 NUMBER OF POST OFFICES AFFECTED

2.15 NUMBER OF TELEPHONE EXCHANGES AFFECTED

2.16 NUMBER OF RAILROAD STATIONS AFFECTED

2.17 NUMBER OF AIRPORTS AFFECTED

2.18 NUMBER OF PORTS AFFECTED

2.19 NUMBER OF MARSHES AFFECTED

2.20 NUMBER OF FISHING PONDS AFFECTED

2.21 NUMBER OF GOLF COURSES AFFECTED

2.22 NUMBER OF PARKS AFFECTED

2.23 NUMBER OF THEATERS AFFECTED

2.24 NUMBER OF RESTAURANTS AFFECTED

2.25 NUMBER OF HOTELS AFFECTED

2.26 NUMBER OF MOTELS AFFECTED

2.27 NUMBER OF CARPENTERS AFFECTED

2.28 NUMBER OF PLUMBERS AFFECTED

2.29 NUMBER OF ELECTRICIANS AFFECTED

2.30 NUMBER OF MECHANICS AFFECTED

2.31 NUMBER OF PAINTERS AFFECTED

2.32 NUMBER OF CARPENTERS AFFECTED

2.33 NUMBER OF PLUMBERS AFFECTED

2.34 NUMBER OF ELECTRICIANS AFFECTED

2.35 NUMBER OF MECHANICS AFFECTED

2.36 NUMBER OF PAINTERS AFFECTED

2.37 NUMBER OF CARPENTERS AFFECTED

2.38 NUMBER OF PLUMBERS AFFECTED

2.39 NUMBER OF ELECTRICIANS AFFECTED

2.40 NUMBER OF MECHANICS AFFECTED

2.41 NUMBER OF PAINTERS AFFECTED

2.42 NUMBER OF CARPENTERS AFFECTED

2.43 NUMBER OF PLUMBERS AFFECTED

2.44 NUMBER OF ELECTRICIANS AFFECTED

2.45 NUMBER OF MECHANICS AFFECTED

2.46 NUMBER OF PAINTERS AFFECTED

2.47 NUMBER OF CARPENTERS AFFECTED

2.48 NUMBER OF PLUMBERS AFFECTED

2.49 NUMBER OF ELECTRICIANS AFFECTED

2.50 NUMBER OF MECHANICS AFFECTED



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 15 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II  
Pisgah National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)										
D.B.H.		by 16 ft. log lengths.										
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4			
10	2	3	4	4								
12	2	4	6	7	8							
14	4	6	8	10	12	13						
16	5	8	11	14	16	18						
18		11	14	18	21	24	27					
20		14	18	23	27	31	34	38				
22		17	23	28	34	38	43	47				
24		21	28	35	41	47	52	58				
26			34	42	50	57	63	70				
28			41	50	59	67	75	83				
30			48	59	70	79	89	98				
32			56	69	81	92	103	114				
34			65	80	94	107	120	132				
36				91	107	122	136	150				
38				103	122	139	155	171				
40				116	137	156	175	192				
42				130	153	175	196	216	Computed			
44				146	172	196	220	242	by CRR			
46				162	191	218	243	268	Checked			
48				179	210	240	268	296	by BF			

Block indicates extent of basic data

Aggregate difference: Table 1.91% high

Average individual deviation: 12.97%

Based on 91 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.354 (\log. \text{d.b.h., inches}) + 0.725 (\log. \text{merch. ht. ft.}) - 1.796$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.354 (\log. 54) + 0.725 (\log. 48) - 1.796$$

$$V = 2.354 (1.732) + 0.725 (1.681) - 1.796$$

$$V = 4.077 + 1.219 - 1.796 = 3.500, \text{ Antilog. is } 3,162 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

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TABLE 16 - BOARD FOOT VOLUME TABLES - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I  
Pisgah National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
:D.B.H. :		by 16 foot log lengths.								:
:Inches :	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4		:
10	2	3	4							:
12	3	5	6	8						:
14	4	7	9	11	12					:
16	6	9	12	14	16	18				:
18		12	15	18	21	24	26			:
20		15	19	23	27	30	33	36		:
22		18	22	28	33	37	41	45		:
24			28	34	40	45	50	54		:
26			34	41	47	54	59	65		:
28			40	48	56	63	70	76		:
30			46	56	65	73	81	88		:
32			54	65	75	84	93	102		:
34			61	74	86	96	107	116		:
36				84	97	109	120	131		:
38				94	109	123	136	148		:
40				105	122	137	152	166		:
42					136	152	169	184	Computed	:
44					151	169	188	205	by CRR	:
46					166	187	206	225	Checked	:
48					182	204	226	247	by JHS	:

Block indicates extent of basic data

Aggregate difference: Table 1.60% low

Average individual deviation: 17.7%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.189 (\text{log. d.b.h., inches}) + 0.653 (\text{log. mech. ht. ft.}) - 1.467$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.189 (\text{log. } 54) + 0.653 (\text{log. } 48) - 1.467$$

$$V = 2.189 (1.732) + 0.653 (1.681) - 1.467$$

$$V = 3.791 + 1.098 - 1.467 = 3.422, \text{ Antilog. is } 2,642 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

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TABLE 17 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I  
Pisgah National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
D.B.H.		by 16 ft. log lengths.								
Inches		1	1½	2	2½	3	3½	4		
10	3	4	5							
12	4	6	7	8						
14	5	8	10	12	14	16				
16	7	10	13	16	18	21	24			
18	9	13	17	20	24	27	31			
20		16	21	26	30	34	38			
22		20	26	31	37	42	47			
24		24	31	38	44	51	57			
26		29	37	45	52	60	67			
28		34	43	52	61	70	79			
30			50	61	71	82	92			
32			57	70	82	94	105			
34				80	93	107	120			Computed by
36				90	105	120	135			CRR
										Checked by
										BF

Block indicates extent of basic data

Aggregate difference: Table 0.34% low

Average individual deviation: 12.34%

Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.142 (\text{log. d.b.h., inches}) + 0.875 (\text{log. merch. ht. ft.}) - 1.782$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.142 (\text{log. 54}) + 0.875 (\text{log. 48}) - 1.782$$

$$V = 2.142 (1.732) + 0.875 (1.681) - 1.782$$

$$V = 3.710 + 1.471 - 1.782 = 3.399, \text{ Antilog. is } 2,506 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

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TABLE 18 - BOARD FOOT VOLUME TABLE - SCRIBNER D.L.C. C. RULE

CHESTNUT OAK - SITE II  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tons)								
:D.B.H.:		by 16 ft. log lengths.								:
:Inches:	$\frac{1}{8}$	1	$1\frac{1}{8}$	2	$2\frac{1}{8}$	3	$3\frac{1}{8}$	4		:
:	:	:	:	:	:	:	:	:	:	:
:	10	2	3	3						:
:	12	3	4	5	6					:
:	14	4	6	8	10	11	13			:
:	16	6	9	12	14	16	18	20		:
:	18	8	12	16	19	22	25	27	30	:
:										:
:	20	10	16	21	25	29	33	36	39	:
:	22	13	21	27	32	37	42	46	50	:
:	24	17	26	34	41	47	53	58	64	:
:	26		33	42	51	58	66	72	79	:
:	28		40	51	62	71	80	88	96	:
:										:
:	30		48	62	74	85	96	106	115	:
:	32		56	75	88	101	114	125	136	:
:	34		66	86	103	119	134	148	161	:
:	36			100	120	138	155	171	186	:
:	38			115	139	160	180	198	215	:
:										:
:	40			132	158	183	205	226	247	Computed by CRR
:	42			150	180	208	233	257	280	Checked by BF
:	44				205	236	265	292	318	

Block indicates extent of basic data

Aggregate difference: Table 0.25% high

Average individual deviation: 13.81%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.648 (\log.d.b.h., \text{inches}) + 0.637 (\log.merch.ht., \text{ft.}) - 2.001$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Volume} = 2.648 (\log.54) + 0.637 (\log.48) - 2.001$$

$$V = 2.648 (1.732) + 0.637 (1.681) - 2.001$$

$$V = 4.586 + 1.071 - 2.001 = 3.656, \text{ Antilog. is } 4,529 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.





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TABLE 19 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE I  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tons)									
:D.B.H.:		by 16 ft. log lengths,									
:Inches:		1	1½	2	2½	3	3½	4	4½	5	
10	3	4	4								
12	4	6	7	9	10						
14	6	9	11	13	15	17	19				
16	9	12	15	18	21	24	26	29			
18		17	21	25	28	32	36	39			
20		22	27	33	38	42	47	52	56		
22		28	35	42	48	54	60	66	72		
24		35	44	52	60	68	76	83	90		
26			54	64	74	84	93	102	111		
28			66	78	90	102	113	124	134		
30			78	93	108	121	135	148	161		
32			93	110	127	144	160	175	190		
34			109	130	150	169	188	206	223		
36				150	173	195	216	237	258		
38				173	200	225	250	274	297		
40				197	228	256	284	312	339		
42				223	258	291	323	354	385		
44				254	292	330	366	402	436		
46				284	327	370	410	450	489		
48					365	411	457	501	544		
50					406	458	508	557	605		

Block indicates extent of basic data (Computed by CRR)  
Aggregate difference: Table 2.00% low (Checked by BF)  
Average individual deviation: 14.91%

Based on 74 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.597 (\log.d.b.h., \text{ inches}) + 0.783 (\log.merch.ht., \text{ ft}) - 2.120$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log Volume} = 2.597 (\log.54) + 0.783 (\log.48) - 2.120$$

$$v = 2.597 (1.732) + 0.783 (1.681) - 2.120$$

$$v = 4.498 + 1.316 - 2.120 = 3.694, \text{ Antilog. is } 4,943 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.





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Table 20 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

## SCARLET OAK - SITE III

## Nantahala and Cherokee National Forests

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens):					
: D.B.H.		by 16 ft. log lengths.					
: Inches	: $\frac{1}{2}$	: 1	: $1\frac{1}{2}$	: 2	: $2\frac{1}{2}$	: 3	:
: 10	: 2	: 3	: 4	:	:	:	:
: 12	: 3	: 5	: 7	: 8	:	:	:
: 14	: 4	: 7	: 9	: 12	: 14	:	:
: 16	: 6	: 9	: 13	: 16	: 19	: 22	:
: 18	: 7	: 13	: 17	: 22	: 26	: 30	:
: 20	: 9	: 16	: 22	: 28	: 33	: 38	:
: 22	: 12	: 20	: 28	: 35	: 42	: 48	:
: 24	: 15	: 25	: 35	: 43	: 51	: 59	:
: 26	:	: 31	: 42	: 52	: 62	: 72	:
: 28	:	:	: 50	: 63	: 75	: 86	:
: 30	:	:	: 59	: 74	: 88	: 101	:
: 32	:	:	: 69	: 86	: 103	: 119	:
: 34	:	:	: 80	: 100	: 119	: 137	: Computed by BF
: 36	:	:	: 91	: 115	: 136	: 157	: Checked by CRR

Block indicates extent of basic data

Aggregate difference: Table 1.1% low

Average individual deviation; 9.99%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.401 (\text{log. d.b.h., inches}) + 0.780 (\text{log. merch. ht. ft.}) - 1.851$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Vol.} = 2.401 (\log. 54) + 0.780 (\log. 48) - 1.851$$

$$'' = 2.401 (1.732) + 0.780 (1.681) = 1.851$$

" " =  $4.159 + 1.311 - 1.851 = 3.619$ , Antilog. is 4,159 bd.ft.

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through use of additional data.

Leonard I. Barrett - Jan. 1936.



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TABLE 21 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE I  
Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H.		by 16 ft. log lengths									
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
10	1	2	3	4							
12	2	4	5	7	8						
14	3	6	8	10	12	14	16				
16	4	8	11	14	17	20	23	26			
18		11	15	20	24	28	31	35			
20		14	20	26	31	36	42	47	52		
22			26	33	40	47	54	60	66		
24			33	42	51	59	68	76	84	92	
26			41	52	63	73	84	94	104	114	
28			49	63	76	89	102	114	126	138	
30				76	92	107	122	137	152	166	
32				90	109	127	145	163	180	197	
34				106	128	150	171	192	212	232	

(Computed by BF  
(Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 2.31% low  
Average individual deviation: 14.0%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.662 (\log.d.b.h., \text{inches}) + 0.855 (\log.merch.ht., \text{ft.}) - 2.339$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 40 inch trees:

$$\text{Log. Volume} = 2.662 (\log.40) + 0.855 (\log.48) - 2.339$$

$$V = 2.662 (1.602) + 0.855 (1.681) - 2.339$$

$$V = 4.265 + 1.437 - 2.339 = 3.363, \text{ Antilog. is } 2,307 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

TABLE 1. SUMMARY OF DATA FOR THE 1960-1961 SEASON									
STATION	DATE	TIME	WIND DIRECTION	WIND SPEED (MPH)	WAVE HEIGHT (FT)	WAVE PERIOD (SEC)	WAVE LENGTH (FT)	WAVE WIDTH (FT)	WAVE AREA (SQ FT)
1	10/10/60	1400	090	12	15	10	150	100	15000
2	10/10/60	1500	090	10	12	8	120	80	9600
3	10/10/60	1600	090	8	10	6	90	60	5400
4	10/10/60	1700	090	6	8	4	60	40	2400
5	10/10/60	1800	090	4	6	3	30	20	600
6	10/10/60	1900	090	3	5	2	20	15	300
7	10/10/60	2000	090	2	4	1	10	10	100
8	10/10/60	2100	090	1	3	0.5	5	5	25
9	10/10/60	2200	090	1	2	0.5	4	4	16
10	10/10/60	2300	090	1	2	0.5	4	4	16
11	10/10/60	2400	090	1	2	0.5	4	4	16
12	10/10/60	2500	090	1	2	0.5	4	4	16
13	10/10/60	2600	090	1	2	0.5	4	4	16
14	10/10/60	2700	090	1	2	0.5	4	4	16
15	10/10/60	2800	090	1	2	0.5	4	4	16
16	10/10/60	2900	090	1	2	0.5	4	4	16
17	10/10/60	3000	090	1	2	0.5	4	4	16
18	10/10/60	3100	090	1	2	0.5	4	4	16
19	10/10/60	3200	090	1	2	0.5	4	4	16
20	10/10/60	3300	090	1	2	0.5	4	4	16
21	10/10/60	3400	090	1	2	0.5	4	4	16
22	10/10/60	3500	090	1	2	0.5	4	4	16
23	10/10/60	3600	090	1	2	0.5	4	4	16
24	10/10/60	3700	090	1	2	0.5	4	4	16
25	10/10/60	3800	090	1	2	0.5	4	4	16
26	10/10/60	3900	090	1	2	0.5	4	4	16
27	10/10/60	4000	090	1	2	0.5	4	4	16
28	10/10/60	4100	090	1	2	0.5	4	4	16
29	10/10/60	4200	090	1	2	0.5	4	4	16
30	10/10/60	4300	090	1	2	0.5	4	4	16
31	10/10/60	4400	090	1	2	0.5	4	4	16
32	10/10/60	4500	090	1	2	0.5	4	4	16
33	10/10/60	4600	090	1	2	0.5	4	4	16
34	10/10/60	4700	090	1	2	0.5	4	4	16
35	10/10/60	4800	090	1	2	0.5	4	4	16
36	10/10/60	4900	090	1	2	0.5	4	4	16
37	10/10/60	5000	090	1	2	0.5	4	4	16
38	10/10/60	5100	090	1	2	0.5	4	4	16
39	10/10/60	5200	090	1	2	0.5	4	4	16
40	10/10/60	5300	090	1	2	0.5	4	4	16
41	10/10/60	5400	090	1	2	0.5	4	4	16
42	10/10/60	5500	090	1	2	0.5	4	4	16
43	10/10/60	5600	090	1	2	0.5	4	4	16
44	10/10/60	5700	090	1	2	0.5	4	4	16
45	10/10/60	5800	090	1	2	0.5	4	4	16
46	10/10/60	5900	090	1	2	0.5	4	4	16
47	10/10/60	6000	090	1	2	0.5	4	4	16
48	10/10/60	6100	090	1	2	0.5	4	4	16
49	10/10/60	6200	090	1	2	0.5	4	4	16
50	10/10/60	6300	090	1	2	0.5	4	4	16
51	10/10/60	6400	090	1	2	0.5	4	4	16
52	10/10/60	6500	090	1	2	0.5	4	4	16
53	10/10/60	6600	090	1	2	0.5	4	4	16
54	10/10/60	6700	090	1	2	0.5	4	4	16
55	10/10/60	6800	090	1	2	0.5	4	4	16
56	10/10/60	6900	090	1	2	0.5	4	4	16
57	10/10/60	7000	090	1	2	0.5	4	4	16
58	10/10/60	7100	090	1	2	0.5	4	4	16
59	10/10/60	7200	090	1	2	0.5	4	4	16
60	10/10/60	7300	090	1	2	0.5	4	4	16
61	10/10/60	7400	090	1	2	0.5	4	4	16
62	10/10/60	7500	090	1	2	0.5	4	4	16
63	10/10/60	7600	090	1	2	0.5	4	4	16
64	10/10/60	7700	090	1	2	0.5	4	4	16
65	10/10/60	7800	090	1	2	0.5	4	4	16
66	10/10/60	7900	090	1	2	0.5	4	4	16
67	10/10/60	8000	090	1	2	0.5	4	4	16
68	10/10/60	8100	090	1	2	0.5	4	4	16
69	10/10/60	8200	090	1	2	0.5	4	4	16
70	10/10/60	8300	090	1	2	0.5	4	4	16
71	10/10/60	8400	090	1	2	0.5	4	4	16
72	10/10/60	8500	090	1	2	0.5	4	4	16
73	10/10/60	8600	090	1	2	0.5	4	4	16
74	10/10/60	8700	090	1	2	0.5	4	4	16
75	10/10/60	8800	090	1	2	0.5	4	4	16
76	10/10/60	8900	090	1	2	0.5	4	4	16
77	10/10/60	9000	090	1	2	0.5	4	4	16
78	10/10/60	9100	090	1	2	0.5	4	4	16
79	10/10/60	9200	090	1	2	0.5	4	4	16
80	10/10/60	9300	090	1	2	0.5	4	4	16
81	10/10/60	9400	090	1	2	0.5	4	4	16
82	10/10/60	9500	090	1	2	0.5	4	4	16
83	10/10/60	9600	090	1	2	0.5	4	4	16
84	10/10/60	9700	090	1	2	0.5	4	4	16
85	10/10/60	9800	090	1	2	0.5	4	4	16
86	10/10/60	9900	090	1	2	0.5	4	4	16
87	10/10/60	10000	090	1	2	0.5	4	4	16
88	10/10/60	10100	090	1	2	0.5	4	4	16
89	10/10/60	10200	090	1	2	0.5	4	4	16
90	10/10/60	10300	090	1	2	0.5	4	4	16
91	10/10/60	10400	090	1	2	0.5	4	4	16
92	10/10/60	10500	090	1	2	0.5	4	4	16
93	10/10/60	10600	090	1	2	0.5	4	4	16
94	10/10/60	10700	090	1	2	0.5	4	4	16
95	10/10/60	10800	090	1	2	0.5	4	4	16
96	10/10/60	10900	090	1	2	0.5	4	4	16
97	10/10/60	11000	090	1	2	0.5	4	4	16
98	10/10/60	11100	090	1	2	0.5	4	4	16
99	10/10/60	11200	090	1	2	0.5	4	4	16
100	10/10/60	11300	090	1	2	0.5	4	4	16

The following table shows the results of the measurements taken during the 1960-1961 season. The data is presented in a tabular format, with columns for Station, Date, Time, Wind Direction, Wind Speed (MPH), Wave Height (FT), Wave Period (SEC), Wave Length (FT), Wave Width (FT), and Wave Area (SQ FT). The data is organized into 100 rows, corresponding to the 100 measurements taken during the season.

The data shows a general trend of decreasing wave height and period as the season progresses. The wind speed remains relatively constant, around 10-12 MPH. The wave length and width also show a general decrease over time. The wave area, which is the product of wave height and width, also decreases as the season progresses.

The following table shows the results of the measurements taken during the 1960-1961 season. The data is presented in a tabular format, with columns for Station, Date, Time, Wind Direction, Wind Speed (MPH), Wave Height (FT), Wave Period (SEC), Wave Length (FT), Wave Width (FT), and Wave Area (SQ FT). The data is organized into 100 rows, corresponding to the 100 measurements taken during the season.

The data shows a general trend of decreasing wave height and period as the season progresses. The wind speed remains relatively constant, around 10-12 MPH. The wave length and width also show a general decrease over time. The wave area, which is the product of wave height and width, also decreases as the season progresses.

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TABLE 22 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE ASH\*

Pisgah and Nantahala National Forests

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H.:		by 16 ft. log lengths.									
Inches:		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
10	2	3	4	5							
12	3	5	6	8	9	10					
14	5	7	10	12	14	15					
16	7	11	14	17	20	22	24	27			
18	9	15	19	23	27	30	34	37			
20		20	26	31	36	41	45	49	53		
22			33	40	47	53	58	64	69		
24				51	60	67	74	81	88		
26				64	74	84	93	101	109		
28				78	90	103	114	124	134		
30				95	110	124	137	150	162	174	
32				113	131	148	164	179	193	208	
34				134	156	175	194	212	229	246	
36				156	181	204	226	247	267	286	

(Computed by BF)

(Checked by PEL)

Block indicates extent of basic data

Aggregate difference: Table 0.17% high

Average individual deviation: 15.0%

Based on 68 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.745 (\text{log.d.b.h., inches}) + 0.662 (\text{log.merch.ht., ft.}) - 2.074$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 40 inch trees.

$$\text{Log. Volume} = 2.745 (\text{log.40}) + 0.662 (\text{log.48}) - 2.074$$

$$V = 2.745 (1.602) + 0.662 (1.681) - 2.074$$

$$V = 4.397 + 1.113 - 2.074 = 3.436, \text{ Antilog. is } 2,729 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.

1. (10-10-10)

2. (10-10-10)

3. (10-10-10)

4. (10-10-10)

5. (10-10-10)

6. (10-10-10)

7. (10-10-10)

8. (10-10-10)

9. (10-10-10)

10. (10-10-10)



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TABLE 23 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH\*

Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)								
:D.B.H.:		by 16 ft. log lengths.								:
Inches:	$\frac{1}{8}$	1	$1\frac{1}{8}$	2	$2\frac{1}{8}$	3	$3\frac{1}{8}$	4		:
10	2	3	4							:
12	2	4	6	8						:
14	4	6	9	11	13	15				:
16	5	9	12	15	18	21	24	26		:
18	6	11	16	20	24	27	31	34		:
20	8	14	20	25	30	35	39	44		:
22	10	18	25	31	37	43	49	54		:
24	12	22	30	38	46	53	60	67		:
26		26	36	46	55	64	72	80		:
28		31	43	55	65	76	86	95		:
30		37	51	64	77	88	100	112	Computed by BF	:
32		43	59	74	89	103	116	125	Checked by CRR	:

Block indicates extent of basic data

Aggregate difference: Table 1.49% low

Average individual deviation: 12.5%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.310 (\log.d.b.h., \text{inches}) + 0.804 (\log.merch.ht., \text{ft.}) - 1.816$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 36 inch trees.

$$\text{Log. Volume} = 2.310 (\log.36) + 0.804 (\log.48) - 1.816$$

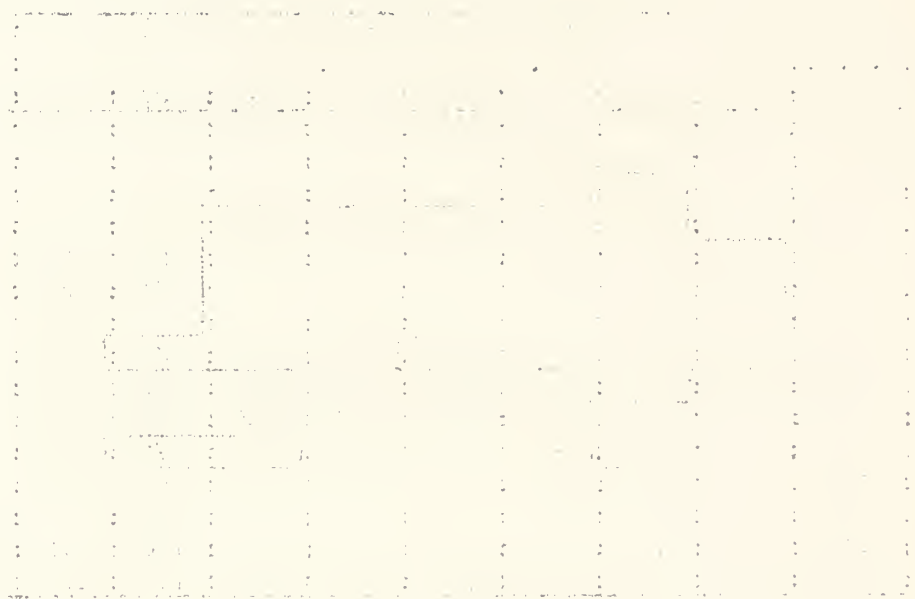
$$V = 2.310 (1.556) + 0.804 (1.681) - 1.816$$

$$V = 3.594 + 1.352 - 1.816 = 3.130, \text{ Antilog. is } 1.349 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.



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TABLE 1A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Ave.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	10	2.0	9.5	1.8	
12	12	3.6	12.1	3.2	
14	16	6.7	14.9	5.7	
16	18	10.3	17.5	8.5	
18	20	15.2	20.2	12.1	
20	22	21.6	22.9	16.7	
22	22	27.6	25.5	20.6	
24	24	37.1	28.3	26.6	
26	24	45.9	30.9	31.7	
28	26	58.9	33.6	39.1	
30	26	70.6	35.8	52.4	
32	26	83.8	37.2	52.6	
34	28	104.0	37.6	64.9	
36	28	120.4	37.6	75.1	
38	28	139.2	37.6	86.9	
40	28	159.2	37.6	99.3	Computed by BF
42	28	180.7	37.6	112.8	Checked by PEL

Aggregate Difference: Table 2.6% high  
Average Individual Deviation: 24.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula which was based on 71 trees.  

$$\text{Log.Vol.} = 2.335 (\log \text{D.B.H., in.}) + 0.721 (\log \text{merch. ht., ft.}) - 2.062$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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INVESTIGATION  
OF THE  
DEPARTMENT OF JUSTICE  
WASHINGTON, D. C.

REPORT OF THE  
FEDERAL BUREAU OF  
INVESTIGATION  
ON THE  
MURDER OF  
JAMES EARL RAY

100-440891

100-440891-1

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TABLE 2A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	28	4.7	9.8	4.2	
12	30	7.8	12.8	6.8	
14	30	11.5	15.2	9.8	
16	32	16.9	17.2	14.0	
18	34	23.6	18.6	19.2	
20	34	31.0	19.8	24.9	
22	36	40.8	20.7	32.4	
24	36	51.0	21.3	40.1	
26	36	62.8	21.5	49.3	
28	38	78.3	21.8	61.2	
30	36	90.3	21.9	70.5	
32	36	106.6	21.9	83.3	
34	36	124.9	21.9	97.5	
36	34	139.0	22.0	108.4	
38	32	154.5	22.0	120.5	
40	30	168.6	22.0	131.5	
42	28	182.9	22.0	142.7	
44	28	207.5	22.0	161.8	
46	26	221.8	22.0	175.0	Computed by CRR
48	26	246.6	22.0	192.3	Checked by BF

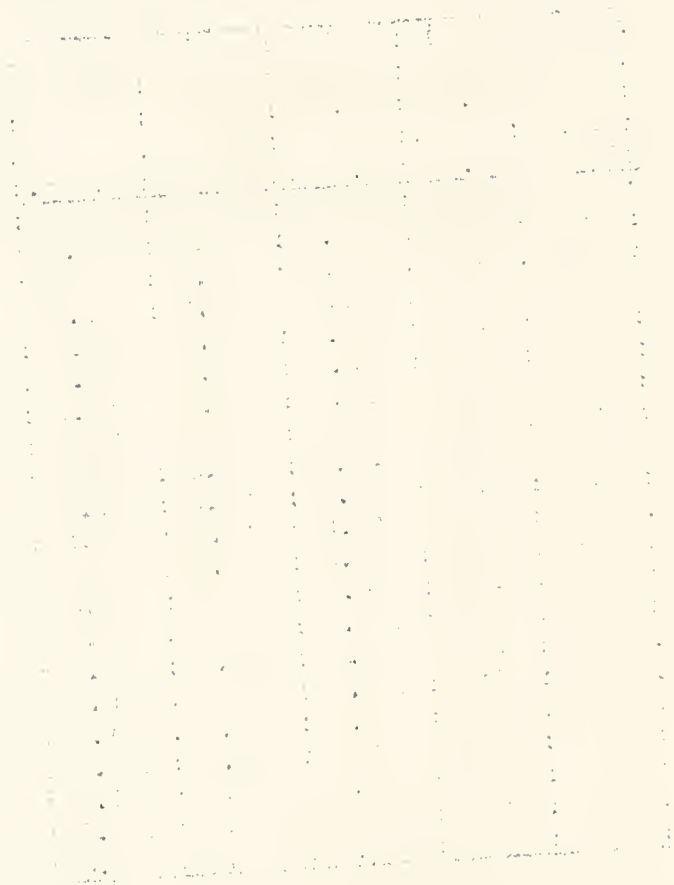
Aggregate Difference: Table 1.47% low  
Average Individual Deviation: 18.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.  
 $\text{Log.Vol.} = 2.558 (\log.\text{D.B.H., in.}) + 0.612 (\log.\text{merch.ht., ft.}) - 1.774$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 3A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Ave.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	14	2.6	20.4	2.1	
12	16	4.7	20.4	3.7	
14	18	7.8	20.4	6.2	
16	20	12.0	20.4	9.6	
18	20	16.4	20.4	13.1	
20	22	23.4	20.4	18.6	
22	24	32.1	20.4	25.6	
24	24	40.6	20.4	32.3	
26	26	53.4	20.4	42.5	
28	26	65.0	20.4	51.7	
30	26	78.3	20.4	62.3	
32	26	93.0	20.4	74.0	
34	26	109.9	20.4	87.5	
36	26	127.6	20.4	101.6	Computed by CRR
38	26	148.0	20.4	117.8	Checked by BF

Aggregate Difference: Table 3.46% high  
Average Individual Deviation: 19.6%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 93 trees.  
 $\text{Log.Vol.} = 2.688 (\log.\text{D.B.H., in.}) + 0.709 (\log.\text{merch.ht., ft}) - 2.079$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





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TABLE 4A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Ave.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	28	4.6	0.0	4.6	
12	30	7.6	5.1	7.2	
14	32	11.6	12.9	10.1	
16	34	16.7	18.4	13.6	
18	34	22.3	21.5	17.5	
20	36	30.1	23.4	25.1	
22	36	37.9	24.5	28.6	
24	38	48.8	25.2	36.5	
26	38	59.5	25.5	44.3	
28	38	71.4	25.5	53.2	
30	38	84.4	25.5	62.9	
32	40	102.6	25.5	76.4	
34	40	119.7	25.5	89.2	
36	40	136.8	25.5	101.9	
38	40	156.7	25.5	116.7	
40	40	177.4	25.5	132.2	
42	40	200.0	25.5	149.0	
44	40	225.4	25.5	167.9	
46	40	250.6	25.5	186.7	Computed by CRR
48	40	278.0	25.5	207.1	Checked by BF

Aggregate Difference: Table 0.09% low  
Average Individual Deviation: 17.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 129 trees.  
 $\text{Log.Vol.} = 2.456 (\log.\text{D.B.H., in.}) + 0.686 (\log.\text{merch.ht., ft.}) - 1.784$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 5A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

	(1)	(2)	(3)	(4)	(5)	
			Gross		Net	
		Ave.	Vol. in:		Vol. in:	
D.B.H.:	Merch.:	tens,	%	tens,		
Inches:	Ht.	bd. ft.:	Defect	bd. ft.:		
	10	10	2.1	34.0	1.4	
	12	20	5.6	30.5	3.9	
	14	30	11.3	26.9	8.3	
	16	34	17.4	23.1	13.4	
	18	36	24.3	19.3	19.6	
	20	36	31.7	15.7	26.7	
	22	38	41.8	12.5	36.6	
	24	38	52.2	10.5	46.7	
	26	38	63.6	10.5	56.9	
	28	40	79.7	10.5	71.3	
	30	40	94.7	10.5	84.8	
	32	40	111.2	10.5	99.5	
	34	40	129.9	10.5	116.3	
	36	40	149.2	10.5	133.5	
	38	40	171.5	10.5	153.5	
	40	40	194.4	10.5	174.0	
	42	40	219.4	10.5	196.4	Computed by CRR
	44	40	247.6	10.5	221.6	Checked by BF

Aggregate Difference: Table 2.87% high  
Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 79 trees.  
 $\text{Log.Vol.} = 2.500 (\log.\text{D.B.H., in.}) + 0.767 (\log.\text{merch.ht., ft.}) - 1.945$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 6A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		:Gross		:Net	
	:Av.	:Vol. in:		:Vol. in:	
:D.B.H.:	:Merch.:	:tens,	: %	:tens,	
:Inches:	:Ht.	:bd. ft.:	:Defect	:bd. ft.:	
:	:	:	:	:	:
: 10	: 22	: 4.1	: 0.0	: 4.1	:
: 12	: 28	: 7.7	: 0.9	: 7.6	:
: 14	: 34	: 13.2	: 10.0	: 11.9	:
: 16	: 38	: 19.9	: 19.0	: 16.1	:
: 18	: 44	: 30.0	: 21.8	: 23.5	:
: 20	: 50	: 43.0	: 22.2	: 33.5	:
: 22	: 52	: 55.8	: 22.4	: 43.3	:
: 24	: 54	: 71.2	: 22.6	: 55.1	:
: 26	: 56	: 89.3	: 22.8	: 68.9	:
: 28	: 56	: 106.7	: 23.1	: 82.1	:
: 30	: 58	: 129.6	: 23.3	: 99.4	:
: 32	: 58	: 151.5	: 23.5	: 115.9	:
: 34	: 58	: 176.1	: 23.8	: 134.2	:
: 36	: 58	: 201.2	: 24.0	: 152.9	:
: 38	: 58	: 230.0	: 24.2	: 174.3	:
: 40	: 60	: 267.7	: 24.5	: 202.1	:
: 42	: 60	: 300.8	: 24.7	: 226.5	:
: 44	: 60	: 337.8	: 24.9	: 253.7	:
: 46	: 60	: 375.6	: 25.1	: 281.3	: Computed by CRR
: 48	: 60	: 415.6	: 25.3	: 310.5	: Checked by BF

Aggregate Difference: Table 1.05% high  
Average Individual Deviation: 14.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 86 trees.  
 $\text{Log.Vol.} = 2.417 (\log.\text{D.B.H., in.}) + 0.831 (\log.\text{merch.ht., ft.}) - 1.922$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





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TABLE 7A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :	
:	:	:Gross :	:	:Net :	:
:	:Av. :	:Vol. in:	:	:Vol. in:	:
:D.B.H.:	:Merch.:	tens, :	% :	tens, :	:
:Inches:	Ht. :	:bd. ft.:	:Defect :	:bd. ft.:	:
:	:	:	:	:	:
: 10 :	24 :	4.6 :	21.4 :	3.6 :	:
: 12 :	28 :	7.8 :	21.4 :	6.1 :	:
: 14 :	30 :	11.7 :	21.4 :	9.2 :	:
: 16 :	32 :	16.8 :	21.4 :	13.2 :	:
: 18 :	34 :	23.0 :	21.4 :	18.1 :	:
: 20 :	36 :	30.8 :	21.4 :	24.2 :	:
: 22 :	38 :	40.0 :	21.4 :	31.4 :	:
: 24 :	38 :	49.1 :	21.4 :	38.6 :	:
: 26 :	40 :	61.5 :	21.4 :	48.3 :	:
: 28 :	40 :	73.1 :	21.4 :	57.5 :	:
: 30 :	40 :	86.1 :	21.4 :	67.7 :	:
: 32 :	40 :	100.3 :	21.4 :	78.8 :	:
: 34 :	42 :	119.9 :	21.4 :	94.2 :	:
: 36 :	42 :	136.4 :	21.4 :	107.2 :	:
: 38 :	42 :	155.6 :	21.4 :	122.3 :	:
: 40 :	42 :	174.8 :	21.4 :	137.4 :	:
: 42 :	42 :	196.2 :	21.4 :	154.2 :	Computed by CRR
: 44 :	42 :	219.6 :	21.4 :	172.6 :	Checked by BF

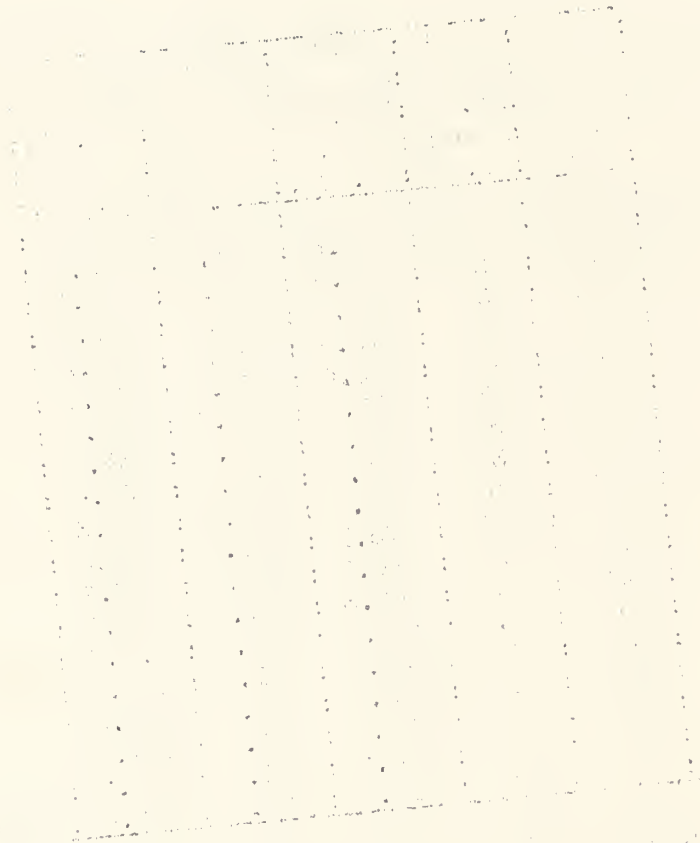
Aggregate Difference: Table 1.64% high  
Average Individual Deviation: 20.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 75 trees.  
 $\text{Log.Vol.} = 2.349 (\log.\text{D.B.H., in.}) + 0.705 (\log.\text{merch.ht., ft.}) - 1.664$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 8A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1)	: (2)	: (3)	: (4)	: (5)	:
:	:	: Gross	:	: Net	:
:	: Av.	: Vol. in:	:	: Vol. in:	:
: D.B.H.:	: Merch.:	: tens,	: %	: tens,	:
: Inches:	: Ht.	: bd. ft.:	: Defect	: bd. ft.:	:
:	:	:	:	:	:
: 10	: 16	: 3.2	: 7.1	: 3.0	:
: 12	: 20	: 6.0	: 11.0	: 5.3	:
: 14	: 24	: 10.0	: 15.0	: 8.5	:
: 16	: 30	: 16.4	: 18.7	: 13.3	:
: 18	: 34	: 24.0	: 21.5	: 18.8	:
: 20	: 40	: 35.3	: 22.8	: 27.3	:
: 22	: 44	: 47.8	: 23.5	: 36.6	:
: 24	: 48	: 63.2	: 24.1	: 48.0	:
: 26	: 50	: 79.2	: 24.6	: 59.7	:
: 28	: 50	: 94.6	: 25.1	: 70.9	:
: 30	: 50	: 111.7	: 25.5	: 83.2	:
: 32	: 48	: 126.2	: 26.0	: 93.4	:
: 34	: 48	: 146.6	: 26.4	: 107.9	:
: 36	: 46	: 161.8	: 26.8	: 118.4	:
: 38	: 46	: 184.6	: 27.3	: 134.2	: Computed by CRR
: 40	: 46	: 208.4	: 27.6	: 150.9	: Checked by BF

Aggregate Difference: Table 0.66% high  
Average Individual Deviation: 20.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 92 trees.  
 $\text{Log.Vol.} = 2.402 (\text{log.D.B.H., in.}) + 0.796 (\text{log.merch.ht., ft.}) - 1.852$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS.- LP  
M-1  
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TABLE 9A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	22	4.1	8.2	3.8	
12	32	8.7	8.2	8.0	
14	42	15.9	8.2	14.6	
16	48	24.4	8.2	22.4	
18	54	35.4	8.2	32.5	
20	60	49.8	8.2	45.7	
22	62	64.0	8.2	58.8	
24	64	80.5	10.1	72.4	
26	64	97.3	16.1	81.6	
28	64	115.3	22.0	89.9	
30	64	135.5	28.0	97.6	
32	64	157.4	34.1	103.7	
34	64	182.0	40.1	109.0	Computed by CRR
36	62	201.2	46.2	108.2	Checked by BF

Aggregate Difference: Table 0.30% high  
Average Individual Deviation: 16.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 97 trees.  
 $\text{Log.Vol.} = 2.326 (\log.\text{D.B.H., in.}) + 0.880 (\log.\text{merch.ht., ft.}) - 1.893$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - LP  
M-1  
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TABLE 10A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	18	3.6	8.2	3.3	
12	24	7.0	8.2	6.4	
14	30	12.0	8.2	11.0	
16	36	19.1	8.2	17.5	
18	40	27.4	8.2	25.2	
20	42	36.5	8.2	33.5	
22	46	49.1	8.2	45.1	
24	48	62.2	10.1	55.9	
26	48	75.0	16.1	62.9	
28	48	88.9	22.0	69.3	
30	48	104.2	28.0	75.0	Computed by CRR
32	48	121.1	34.1	79.8	Checked by BF

Aggregate Difference: Table 3.47% low  
Average Individual Deviation: 21.6%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.  
 $\text{Log.Vol.} = 2.311 (\log.\text{D.B.H., in.}) + 0.852 (\log.\text{merch.ht., ft.}) - 1.827$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





RS - .LP  
M-1  
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TABLE 11. - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :	
:	:	:Gross :	:	:Net :	
:	:Av. :	:Vol. in:	:	:Vol. in:	
:D.B.H.:	:Merch.:	tens, :	% :	tens, :	
:Inches:	Ht. :	:bd. ft.:	:Defect :	:bd. ft.:	
:	:	:	:	:	:
: 10 :	22 :	4.0 :	0.0 :	4.0 :	
: 12 :	32 :	8.8 :	2.5 :	8.6 :	
: 14 :	38 :	15.0 :	5.5 :	14.2 :	
: 16 :	44 :	23.6 :	6.0 :	22.2 :	
: 18 :	48 :	34.7 :	6.0 :	32.6 :	
: 20 :	50 :	47.0 :	6.0 :	44.2 :	
: 22 :	54 :	63.9 :	6.0 :	60.1 :	
: 24 :	56 :	82.4 :	6.0 :	77.5 :	
: 26 :	58 :	104.3 :	6.0 :	98.0 :	
: 28 :	60 :	129.7 :	6.0 :	121.9 :	
: 30 :	60 :	155.0 :	6.0 :	145.7 :	
: 32 :	62 :	188.0 :	6.0 :	176.7 :	
: 34 :	62 :	220.7 :	6.0 :	207.5 :	Computed by BF
: 36 :	62 :	254.5 :	6.0 :	239.2 :	Checked by BF
:	:	:	:	:	:

Aggregate Difference: Table 0.07% high  
Average Individual Deviation: 20.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 135 trees.  
 $\text{Log.Vol.} = 2.579 (\log.\text{D.B.H.,in.}) + 0.809 (\log.\text{merch.ht.,ft.}) - 2.057$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - LP  
M-1  
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TABLE 12A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	22	3.9	0.7	3.9	
12	28	7.7	3.5	7.4	
14	34	13.6	5.4	12.9	
16	40	22.1	6.0	20.8	
18	44	32.6	6.0	30.6	
20	46	44.7	6.0	42.0	
22	46	57.4	6.0	54.0	
24	46	72.5	6.0	68.2	
26	46	89.8	6.0	84.4	
28	46	109.1	6.0	102.6	
30	46	130.9	6.0	123.0	
32	46	155.3	6.0	146.0	
34	46	183.3	6.0	172.3	Computed by BF
36	46	212.3	6.0	199.6	Checked by PEL

Aggregate Difference: Table 4.06% high  
Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.  
 $\text{Log.Vol.} = 2.650 (\log.\text{D.B.H., in.}) + 0.802 (\log.\text{merch.ht., ft.}) - 2.130$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - .LP  
M-1  
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TABLE 13. - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II  
Cherokee National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in		Vol. in	
D.B.H.	Merch.	tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
8	24	2.5	13.7	2.2	
10	28	4.8	11.2	4.3	
12	32	8.2	8.5	7.5	
14	36	13.0	5.7	12.3	
16	40	19.5	3.0	18.9	
18	44	27.8	0.3	27.7	
20	48	38.4	0.0	38.4	
22	52	51.1	0.0	51.1	Computed by BF
24	54	64.9	0.0	64.9	Checked by PEL

Aggregate Difference: Table 2.44% high  
Average Individual Deviation: 18.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived from substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.  
 $\text{Log.Vol.} = 2.404 (\log.\text{D.B.H., in.}) + 0.762 (\log.\text{merch.ht., ft.}) - 1.825$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





RS - AF  
 H-1  
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TABLE 14A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I  
 Pisgah National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens,	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	10	1.9	22.4	1.5	
12	16	4.2	22.8	3.2	
14	22	7.7	23.4	5.9	
16	28	12.6	24.0	9.6	
18	34	19.2	24.5	14.5	
20	38	26.7	24.9	20.1	
22	42	35.8	25.4	26.7	
24	48	48.5	26.0	35.9	
26	50	60.1	26.5	44.2	
28	50	70.9	27.0	51.8	
30	50	83.0	27.5	60.2	
32	50	96.0	28.0	69.1	
34	50	110.7	28.5	79.2	
36	50	125.2	29.2	88.6	
38	52	146.3	29.7	102.8	
40	52	164.2	30.2	114.6	
42	52	183.2	30.8	126.8	
44	52	204.4	31.3	140.4	
46	52	225.6	31.8	153.9	
48	52	247.9	32.4	167.6	
50	52	272.2	33.0	182.4	
52	52	297.4	33.5	197.8	
54	52	323.1	34.0	213.2	
56	52	351.0	34.5	229.9	
58	52	379.6	35.0	246.7	Computed by CRR
60	52	410.5	35.5	264.8	Checked by BF

Aggregate Difference: Table 2.53% high  
 Average Individual Deviation: 16.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 214 trees.  
 $\text{Log.Vol.} = 2.263 (\log.\text{D.B.H.,in.}) + 0.791 (\log.\text{merch.ht.,ft.}) - 1.767$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M - 1  
(S-Timber Surveys)

TABLE 15A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II  
Pisgah National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	6	1.2	0.0	1.2	
12	14	3.7	2.0	3.6	
14	24	8.0	9.8	7.2	
16	30	12.8	15.0	10.9	
18	34	18.6	18.8	15.1	
20	36	24.8	21.5	19.5	
22	38	32.2	23.8	24.5	
24	40	41.1	25.8	30.5	
26	40	49.7	27.8	35.9	
28	40	59.1	29.6	41.6	
30	40	69.5	31.0	48.0	
32	40	81.0	32.0	55.1	
34	40	93.7	32.6	63.2	
36	38	102.7	33.0	68.8	
38	38	117.0	33.3	78.0	
40	36	126.7	33.4	84.4	
42	36	142.0	33.5	94.4	
44	34	152.7	33.5	101.5	
46	34	169.2	33.5	112.5	
48	32	178.7	33.5	118.8	Computed by CRR
50	32	197.0	33.5	131.0	Checked by BF

Aggregate Difference: Table 1.52% low

Average Individual Deviation: 17.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 91 trees.  
 $\text{Log.Vol.} = 2.354 (\text{log.D.B.H., in.}) + 0.725 (\text{log.merch.ht., ft.}) - 1.796$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AF  
M-1  
(S-Timber Surveys)

TABLE 16A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I  
Pisgah National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	18	3.4	0.0	3.4	
12	22	5.9	6.4	5.5	
14	26	9.2	13.1	3.0	
16	30	13.6	18.6	11.1	
18	34	19.0	22.7	14.7	
20	38	25.8	25.3	19.3	
22	42	33.9	26.3	25.0	
24	44	42.4	26.7	31.1	
26	48	53.5	27.2	38.9	
28	50	64.5	27.5	46.8	
30	52	77.0	28.0	55.4	
32	52	88.6	28.5	63.3	
34	52	101.6	28.8	72.3	
36	52	114.6	29.2	81.1	
38	50	126.0	29.7	88.6	
40	48	137.1	30.0	96.0	
42	48	152.4	30.4	106.1	
44	46	164.7	30.5	114.5	
46	44	176.1	30.5	122.4	Computed by CRR
48	44	192.8	30.5	134.0	Checked by BF

Aggregate Difference: Table 0.79% low  
Average Individual Deviation: 24.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.  
 $\text{Log.Vol.} = 2.189 (\log \text{D.B.H., in.}) + 0.653 (\log \text{merch.ht., ft.}) - 1.467$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 17A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I  
Pisgah National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :	
:	:	:Gross :	:	:Net :	
:	:D.B.H.:	:Vol. in:	:	:Vol. in:	
:	:Inches:	:tens :	% :	:tens :	
:	:Ht. :	:bd. ft.:	:Defect :	:bd. ft.:	
:	:	:	:	:	:
: 10 :	22 :	3.4 :	4.8 :	3.2 :	
: 12 :	26 :	5.9 :	5.1 :	5.6 :	
: 14 :	28 :	8.7 :	5.5 :	8.2 :	
: 16 :	32 :	13.0 :	5.9 :	12.2 :	
: 18 :	36 :	18.5 :	6.3 :	17.3 :	
: 20 :	38 :	24.4 :	6.6 :	22.8 :	
: 22 :	42 :	32.6 :	7.0 :	30.3 :	
: 24 :	44 :	41.0 :	7.5 :	37.9 :	
: 26 :	46 :	50.6 :	7.5 :	46.8 :	
: 28 :	50 :	63.6 :	7.5 :	58.8 :	
: 30 :	52 :	76.4 :	7.5 :	70.7 :	
: 32 :	54 :	90.6 :	7.5 :	83.8 :	
: 34 :	58 :	110.2 :	7.5 :	101.9 :	Computed by CRR
: 36 :	60 :	127.7 :	7.5 :	118.1 :	Checked by BF
:	:	:	:	:	:

Aggregate Difference: Table 1.25% high  
Average Individual Deviation: 19.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.  
 $\text{Log.Vol.} = 2.142 (\log.\text{D.B.H., in.}) + 0.875 (\log.\text{merch.ht., ft.}) - 1.782$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





RS - AP  
M-1  
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TABLE 18A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE II  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	10	1.9	1.3	1.9	
12	16	4.2	6.7	3.9	
14	18	6.8	12.0	6.0	
16	22	11.0	17.4	9.1	
18	26	18.3	22.5	14.2	
20	28	23.2	25.1	17.4	
22	30	31.0	25.5	23.1	
24	32	40.9	25.0	30.7	
26	34	52.6	24.6	39.7	
28	36	66.2	24.2	50.2	
30	38	82.5	23.7	62.9	
32	38	97.8	23.2	75.1	
34	40	119.1	22.7	92.1	
36	42	142.2	22.3	110.5	
38	42	164.6	21.8	128.7	
40	44	194.0	21.4	152.5	
42	46	226.8	21.0	179.2	Computed by CRR
44	46	257.6	20.5	204.8	Checked by BF

Aggregate Difference: Table 0.49% high  
Average Individual Deviation: 21.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.  
 $\text{Log.Vol.} = 2.648 (\log.\text{D.B.H.,in.}) + 0.637 (\log.\text{merch.ht.,ft.}) - 2.001$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - LP  
M-1  
(S-Timber Surveys)

TABLE 19A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE I  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	16	2.6	0.0	2.6	
12	26	6.2	0.6	5.8	
14	36	11.8	5.2	11.2	
16	44	19.6	9.8	17.7	
18	50	29.4	14.4	25.2	
20	54	41.2	18.8	33.5	
22	56	54.2	20.7	43.0	
24	58	70.0	20.7	55.5	
26	60	88.6	20.5	70.4	
28	62	109.9	20.1	87.8	
30	62	131.5	19.6	105.7	
32	64	159.6	19.3	128.8	
34	64	187.5	18.9	152.1	
36	64	216.3	18.5	176.3	
38	64	249.5	18.0	204.6	
40	64	284.4	17.7	234.1	
42	66	330.7	17.3	275.5	
44	66	375.2	16.9	311.8	
46	66	420.1	16.5	350.8	
48	66	468.1	16.0	393.2	Computed by CRR
50	66	520.4	15.6	439.2	Checked by BF

Aggregate Difference: Table 1.16% high  
Average Individual Deviation: 19.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 74 trees.  
 $\text{Log.Vol.} = 2.597 (\log.\text{D.B.H., in.}) + 0.783 (\log.\text{merch.ht., ft.}) - 2.120$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 20A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SCARLET OAK - SITE III  
Nantahala and Cherokee National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	12	2.4	14.1	2.1	
12	14	4.3	17.3	3.6	
14	16	6.9	20.4	5.5	
16	20	11.3	23.7	8.6	
18	22	16.1	27.0	11.8	
20	24	22.3	30.2	15.6	
22	26	29.8	33.4	19.8	
24	30	41.0	36.7	26.0	
26	32	52.5	40.0	31.5	
28	34	65.7	43.1	37.4	
30	36	81.0	46.5	43.3	
32	38	98.7	49.8	49.5	
34	58	114.6	53.0	53.9	Computed by BF
36	38	131.0	56.4	57.1	Checked by PEL

Aggregate Difference: Table 3.07% high  
Average Individual Deviation: 22.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.  
 $\text{Log.Vol.} = 2.401 (\log \text{D.B.H., in.}) + 0.780 (\log \text{merch.ht., ft.}) - 1.851$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.





RS - AP  
M-1  
(S-Timber Surveys)

TABLE 211 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

B.L.SSWOOD - SITE I  
Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)	
		Gross		Net	
	Av.	Vol. in:		Vol. in:	
D.B.H.	Merch.	tens	%	tens	
Inches	Ht.	bd. ft.	Defect	bd. ft.	
10	30	3.9	6.6	3.6	
12	32	6.6	7.5	6.1	
14	36	11.0	8.5	10.1	
16	40	17.2	9.8	15.5	
18	42	24.6	11.6	21.7	
20	46	35.1	14.3	30.1	
22	48	46.8	18.1	38.3	
24	50	61.3	22.7	47.4	
26	52	78.6	29.4	55.5	
28	52	95.5	39.0	58.3	
30	52	114.8	50.1	57.3	
32	52	136.2	61.3	52.7	Computed by BF
34	52	160.7	72.5	44.2	Checked by PEL

Aggregate Difference: Table 0.62% low  
Average Individual Deviation: 22.9%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.  
 $\text{Log. Vol.} = 2.662 (\log \text{D.B.H., in.}) + 0.855 (\log \text{merch. ht., ft.}) - 2.339$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS-1P  
M-1  
(S-Timber Surveys)

TABLE 22A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE\*  
Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross		Net
Av.		Vol. in:		Vol. in:
D.B.H.	Merch.	tens	%	tens
Inches	Ht.	bd. ft.	Defect	bd. ft.
10	22	3.6	0.0	3.6
12	26	6.6	7.0	6.1
14	32	11.7	15.1	9.9
16	38	18.9	19.0	15.3
18	42	27.9	20.2	22.3
20	46	39.6	20.2	31.6
22	48	52.8	20.2	42.1
24	50	68.9	20.2	55.0
26	52	88.2	20.2	70.4
28	54	110.8	20.2	88.4
30	56	137.1	20.2	109.4
32	56	163.7	20.2	130.6
34	58	198.6	20.2	158.5
36	58	231.2	20.2	184.5

Computed by BF  
Checked by BF

Aggregate Difference: Table 5.29% high  
Average Individual Deviation: 19.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 68 trees.  
 $\text{Log.Vol.} = 2.745 (\log.\text{D.B.H., in.}) + 0.662 (\log.\text{merch.ht., ft.}) - 2.074$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 23A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH\*

Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :	
:	:	:Gross :	:	:Net :	
:	:Av. :	:Vol. in:	:	:Vol. in:	
:D.B.H.:	:Merch.:	:tens :	% :	:tens :	
:Inches:	:Ht. :	:bd. ft.:	:Defect :	:bd. ft.:	
:	:	:	:	:	:
: 10 :	10 :	2.0 :	0.0 :	2.0 :	
: 12 :	18 :	4.8 :	6.0 :	4.5 :	
: 14 :	24 :	8.1 :	12.2 :	7.1 :	
: 16 :	28 :	13.4 :	18.5 :	10.9 :	
: 18 :	30 :	18.6 :	24.6 :	14.0 :	
: 20 :	30 :	23.8 :	29.7 :	16.7 :	
: 22 :	32 :	31.2 :	31.0 :	21.5 :	
: 24 :	32 :	38.2 :	31.0 :	26.4 :	
: 26 :	34 :	48.3 :	31.0 :	33.3 :	
: 28 :	34 :	57.3 :	31.0 :	39.5 :	
: 30 :	36 :	70.3 :	30.9 :	48.6 :	Computed by CRR
: 32 :	36 :	81.6 :	30.8 :	56.5 :	Checked by BF

Aggregate Difference: Table 0.62% high  
Average Individual Deviation: 32.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.  
 $\text{Log.Vol.} = 2.310 (\log.\text{D.B.H.,In.}) + 0.804 (\log.\text{merch.ht.,ft.}) - 1.816$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.

